

## Federal Communications Commission

## § 22.625

470.0375	470.1875	473.0375	473.1875
470.0625	470.2125	473.0625	473.2125
470.0875	470.2375	473.0875	473.2375
470.1125	470.2625	473.1125	473.2625
470.1375	470.2875	473.1375	473.2875

### Philadelphia

500.0125	503.0125	506.0125	509.0125
500.0375	503.0375	506.0375	509.0375
500.0625	503.0625	506.0625	509.0625
500.0875	503.0875	506.0875	509.0875
500.1125	503.1125	506.1125	509.1125
500.1375	503.1375	506.1375	509.1375
500.1625	503.1625	506.1625	509.1625
500.1875	503.1875	506.1875	509.1875
500.2125	503.2125	506.2125	509.2125
500.2375	503.2375	506.2375	509.2375
500.2625	503.2625	506.2625	509.2625
500.2875	503.2875	506.2875	509.2875

### Pittsburgh

470.0125	470.1625	473.0125	473.1625
470.0375	470.1875	473.0375	473.1875
470.0625	470.2125	473.0625	473.2125
470.0875	470.2375	473.0875	473.2375
470.1125	470.2625	473.1125	473.2625
470.1375	470.2875	473.1375	473.2875

### San Francisco

482.0125	485.0125	488.0125	491.0125
482.0375	485.0375	488.0375	491.0375
482.0625	485.0625	488.0625	491.0625
482.0875	485.0875	488.0875	491.0875
482.1125	485.1125	488.1125	491.1125
482.1375	485.1375	488.1375	491.1375
482.1625	485.1625	488.1625	491.1625
482.1875	485.1875	488.1875	491.1875
482.2125	485.2125	488.2125	491.2125
482.2375	485.2375	488.2375	491.2375
482.2625	485.2625	488.2625	491.2625
482.2875	485.2875	488.2875	491.2875

### Washington, DC

488.0125	491.0125	494.0125	497.0125
488.0375	491.0375	494.0375	497.0375
488.0625	491.0625	494.0625	497.0625
488.0875	491.0875	494.0875	497.0875
488.1125	491.1125	494.1125	497.1125
488.1375	491.1375	494.1375	497.1375
488.1625	491.1625	494.1625	497.1625
488.1875	491.1875	494.1875	497.1875
488.2125	491.2125	494.2125	497.2125
488.2375	491.2375	494.2375	497.2375
488.2625	491.2625	494.2625	497.2625
488.2875	491.2875	494.2875	497.2875

[59 FR 59507, Nov. 17, 1994; 60 FR 9890, Feb. 22, 1995, as amended at 61 FR 54099, Oct. 17, 1996; 65 FR 17448, Apr. 3, 2000]

### § 22.623 System configuration.

This section requires a minimum configuration for point-to-multipoint systems using the channels listed in § 22.621.

(a) *928-960 MHz.* The channels may be assigned, individually or paired, only to fixed transmitters in a system that controls at least four public mobile base transmitters that transmit on the same channel. If a 932-933 MHz channel and a 941-942 MHz channel are assigned

as a pair, the 941-942 MHz channel must be assigned only to control transmitters; the 932-933 MHz channel may be assigned to control or fixed relay transmitters.

(b) *470-512 MHz.* These channels may be assigned only individually (unpaired), to control transmitters that directly control at least four public mobile base transmitters that transmit on the same channel. Fixed relay transmitters are not authorized.

(c) *Selection and assignment.* The FCC selects and assigns a channel when granting applications for authorization to operate a new station to transmit in the 470-512, 932-933 and 941-942 MHz frequency ranges. Applicants having a preference may request the assignment of a specific channel or channel pair, but the FCC may in some cases be unable to satisfy such requests.

### § 22.625 Transmitter locations.

This section governs where point-to-multipoint transmitters on the channels listed in § 22.621 may be located.

(a) *928-960 MHz.* In this frequency range, the required minimum distance separation between co-channel fixed transmitters is 113 kilometers (70 miles). However, this requirement may be waived if the applicant submits an engineering analysis that shows that no interference would be caused to either system. In such a case, a developmental authorization may be issued (see § 22.415). If no interference is experienced during the term of the developmental authorization, the licensee may apply for a regular authorization.

(b) *470-512 MHz.* The purpose of the rule in paragraph (b)(1) of this section is to define the areas in which the 470-512 MHz channels are allocated for public mobile use. The purpose of the rules in paragraphs (b)(2) and (b)(3) of this section is to reduce the likelihood that interference to television reception from public mobile operations on these channels will occur.

(1) *Control transmitter locations.* Control transmitter locations must be within 80 kilometers (50 miles) of the designated locations in this paragraph.

Urban area	N. latitude	W. longitude
Boston, MA .....	42°21'24.4"	71°03'22.2"
Chicago, IL .....	41°52'28.1"	87°38'22.2"
Cleveland, OH .....	41°29'51.2"	81°41'49.5"

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Urban area	N. latitude	W. longitude
Dallas, TX .....	32°47'09.5"	96°47'38.0"
Detroit, MI .....	42°19'48.1"	83°02'56.7"
Houston, TX .....	29°45'26.8"	95°21'37.8"
Los Angeles, CA .....	34°03'15.0"	118°14'31.3"
Miami, FL .....	25°46'38.6"	80°11'31.2"
New York, NY .....	40°45'6.4"	73°59'37.5"
Philadelphia, PA .....	39°56'58.4"	75°09'19.6"
Pittsburgh, PA .....	40°26'19.2"	79°59'59.2"
San Francisco-Oakland, CA ..	37°46'38.7"	122°24'43.9"
Washington, DC .....	38°53'51.4"	77°00'31.9"

**Note:** Coordinates are referenced to North American Datum 1983 (NAD 83).

(2) *Protection from intermodulation interference.* Control transmitter locations must be at least 1.6 kilometers (1 mile) from the main transmitter locations of all TV stations transmitting on TV channels separated by 2, 3, 4, 5, 7, or 8 TV channels from the TV channel containing the frequencies on which the control station will transmit. This requirement is intended to reduce the likelihood of intermodulation interference.

(3) *Co-channel protection from control transmitters with high antennas.* This paragraph applies only to control transmitters that utilize an antenna height of more than 152 meters (500 feet) above average terrain. The distance between the location of such a control transmitter and the applicable protected TV station location specified in this paragraph must equal or exceed the sum of the distance from the control transmitter location to the radio horizon in the direction of the specified location and 89 kilometers (55 miles—representing the distance from the main transmitter location of the TV station to its Grade B contour in the direction of the control transmitter). The protected TV station locations in this paragraph are the locations of record as of September 1974, and these do not change even though the TV stations may have been subsequently relocated.

(i) The protected TV station locations are as follows:

Control transmitter frequency range	Protected TV station location
470–476 MHz.	Washington, DC 38°57'17" 77°00'17"
476–482 MHz.	Lancaster, PA 40°15'45" 76°27'49"

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(ii) The distance to the radio horizon is calculated using the following formula:

$$d = \sqrt{17 \times h}$$

where

d is the distance to the radio horizon in kilometers

h is the height of the antenna center of radiation above ground level in meters

[59 FR 59507, Nov. 17, 1994, as amended at 63 FR 68946, Dec. 14, 1998]

## § 22.627 Effective radiated power limits.

The effective radiated power (ERP) of transmitters operating on the channels listed in § 22.621 must not exceed the limits in this section.

(a) *Maximum ERP.* The ERP must not exceed the applicable limits in this paragraph under any circumstances.

Frequency range (MHz)	Maximum ERP (watts)
470–512 .....	1000
928–929 .....	50
932–933 .....	30
941–942 .....	600
952–960 .....	150

(b) *470–512 MHz limits.* The purpose of the rules in paragraphs (b)(1) through (b)(3) of this section is to reduce the likelihood that interference to television reception from public mobile operations on these channels will occur. The protected TV station locations specified in this section are the locations of record as of September 1974, and these do not change even though the TV stations may have been subsequently relocated.

(1) *Co-channel protection.* The ERP of control transmitters must not exceed the limits in the tables in paragraphs (b)(1)(ii) and (b)(1)(iii) of this section. The limits depend upon the height above average terrain of the control transmitter antenna and the distance between the control transmitter and the nearest protected TV station location in paragraph (b)(1)(i) of this section.

(i) The protected TV station locations are as follows (all coordinates are referenced to North American Datum 1983 (NAD83)):